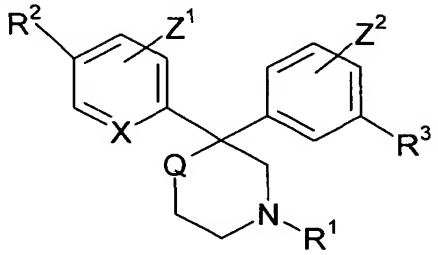
CLAIMS

1. A compound of the formula



I

R^1 is hydrogen, $(C_0\text{-}C_8)$alkoxy-$(C_1\text{-}C_8)$alkyl-, wherein the total number of carbon atoms is eight or less, aryl, aryl-$(C_1\text{-}C_8)$alkyl-, heteroaryl, heteroaryl-$(C_1\text{-}C_8)$alkyl-, heterocyclic, heterocyclic-$(C_1\text{-}C_8)$alkyl, $(C_3\text{-}C_7)$cycloalkyl-, or $(C_3\text{-}C_7)$cycloalkyl-$(C_1\text{-}C_8)$alkyl, wherein said aryl and the aryl moiety of said aryl-$(C_1\text{-}C_8)$alkyl- are selected, independently, from phenyl and napthyl, and wherein said heteroaryl and the heteroaryl moiety of said heteroaryl-$(C_1\text{-}C_8)$alkyl- are selected, independently, from pyrazinyl, benzofuranyl, quinolyl, isoquinolyl, benzothienyl, isobenzofuryl, pyrazolyl, indolyl, isoindolyl, benzimidazolyl, purinyl, carbazolyl, 1,2,5-thiadiazolyl, quinazolinyl, pyridazinyl, pyrazinyl, cinnolinyl, phthalazinyl, quinoxalinyl, xanthinyl, hypoxanthinyl, pteridinyl, 5-azacytidinyl, 5-azauracilyl, triazolopyridinyl, imidazolopyridinyl, pyrrolopyrimidinyl, pyrazolopyrimidinyl, oxazolyl, oxadiazoyl, isoxazoyl, thiazolyl, isothiazolyl, furanyl, pyrazolyl, pyrrolyl, tetrazolyl, triazolyl, thienyl, imidazolyl, pyridinyl, and pyrimidinyl; and wherein said heterocyclic and the heterocyclic moiety of said heterocyclic-$(C_1\text{-}C_8)$alkyl- are selected from saturated or unsaturated nonaromatic monocyclic or bicyclic ring systems, wherein said monocyclic ring systems contain from four to seven ring carbon atoms, from one to three of which may optionally be replaced with O, N or S, and wherein said bicyclic ring systems contain from seven to twelve ring carbon atoms, from one to four of which may optionally be replaced with O, N or S; and wherein any of the aryl, heteroaryl or heterocyclic moieties of R^1 may optionally be substituted with from one to three substitutuents, preferably with one or two substutituents, independently selected from halo (i.e., chloro, fluoro, bromo or iodo), $(C_1\text{-}C_6)$alkyl optionally substituted with from one to seven (preferably with from zero to four) fluorine atoms, phenyl, benzyl, hydroxy, acetyl, amino, cyano, nitro, $(C_1\text{-}C_6)$alkoxy, $(C_1\text{-}C_6)$alkylamino and $[(C_1\text{-}C_6)\text{alkyl}]_2$amino, and wherein any of the alkyl moieties in R^1 (e.g., the alkyl moieties of alkyl, alkoxy or alkylamino groups) may optionally be substituted with from one to seven (preferably with from zero to four) fluorine atoms;

R^2 is hydrogen, aryl, heteroaryl, heterocyclic, SO_2R^4, COR^4, $CONR^5R^6$, $COOR^4$, or $C(OH)R^5R^6$ wherein each of R^4, R^5 and R^6 is defined, independently, as R^1 is defined above, or R^5 and R^6, together with the carbon or nitrogen to which they are both attached, form a

three to seven membered saturated ring containing from zero to three heterocarbons selected, independently, from O, N and S, and wherein said aryl, heteroaryl, and heterocyclic are defined as such terms are defined above in the definition of R^1, and wherein any of the aryl, heteroaryl and heterocyclic moieties of R^2 may optionally be substituted with from one to three substitutuents, preferably with one or two substutituents, independently selected from halo (i.e., chloro, fluoro, bromo or iodo), $(C_1\text{-}C_6)$alkyl optionally substituted with from one to seven (preferably with from zero to four) fluorine atoms, phenyl, benzyl, hydroxy, acetyl, amino, cyano, nitro, $(C_1\text{-}C_6)$alkoxy optionally substituted with from one to seven (preferably with from zero to four) fluorine atoms, $(C_1\text{-}C_6)$alkylamino and $[(C_1\text{-}C_6)\text{alkyl}]_2$amino;

R^3 is hydroxy, $-NHSO_2R^7$, $-C(OH)R^7R^8$, $-OC(=O)R^7$, fluorine or $-CONHR^7$, wherein R^7 and R^8 are the same or different and are selected from hydrogen, $(C_1\text{-}C_4)$alkyl, $(C_1\text{-}C_4)$alkoxy and $(C_1\text{-}C_4)$alkoxy-$(C_1\text{-}C_4)$alkyl having a total of four or less carbon atoms, and wherein any of the alkyl moieties of R^7 and R^8 may optionally be substituted with from one to seven (preferably with from zero to four) fluorine atoms;

Q is oxygen or CH_2;

X is CH or N; and

Z^1 and Z^2 are selected, independently, from hydrogen, halo and $(C_1\text{-}C_5)$alkyl;

with the proviso that there are no two adjacent ring oxygen atoms and no ring oxygen atom adjacent to either a ring nitrogen atom or a ring sulfur atom in any of the heterocyclic or heteroaryl moieties of formula I;

or a pharmaceutically acceptable salt of such compound.

2. A compound according to claim 1 wherein Q is CH_2.

3. A compound according to claim 1 wherein X is CH.

4. A compound according to claim wherein X is N.

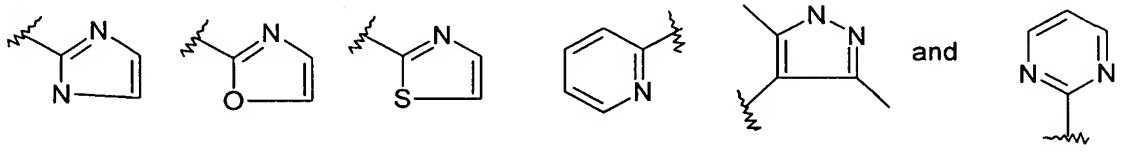
5. A compound according to claim 1 wherein Q is oxygen.

6. A compound according to claim 1 wherein

R^3 is OH, $CONH_2$, or fluoro.

7. A compound according to claim 1 wherein

R^2 is selected from $C(OH)(C_2H_6)_2$, $CONCH_3(CH_2CH_3)$, $CON(C_2H_6)_2$ and the folllowing cyclic groups:



(a) (b) (c) (d) (e) (f)

8. A compound according to claim 2 wherein X is CH.

9. A compound according to claim 2 wherein X is N.

10. A compound according to claim 6 wherein Q is CH_2 and X is CH.

11. A compound according to claim 7 wherein Q is CH_2 and X is CH.

12. A compound according to claim 6 wherein Q is CH_2 and X is N.

13. A compound according to claim 7 wherein Q is CH_2 and X is N.

14. A pharmaceutical composition for treating a disorder or condition selected from inflammatory diseases such as arthritis, psoriasis, asthma, or inflammatory bowel disease, disorders of respiratory function such as asthma, cough and apnea, allergies, gastrointestinal disorders such as gastritis, functional bowel disease, irritable bowel syndrome, functional diarrhoea, functional distension, functional pain, nonulcerogenic dyspepsia and other disorders of motility or secretion, and emesis, stroke, shock, brain edema, head trauma, spinal cord trauma, cerebral ischemia, cerebral deficits subsequent to cardiac bypass surgery and grafting, urogential tract disorders such as urinary incontinence, chemical dependencies and addictions (e.g., addictions to or dependencies on alcohol, opiates, benzodiazepines, nicotine, heroin or cocaine), chronic pain, nonsomatic pain, acute pain and neurogenic pain, systemic lupus erythematosis, Hodgkin's disease, Sjogren's disease, epilepsy and rejection in organ transplants and skin grafts in a mammal, comprising an amount of a compound according to claim 1 that is effective in treating such disorder or condition and a pharmaceutically acceptable carrier.

15. A pharmaceutical composition for treating a disorder or condition, the treatment or prevention of which can be effected or facilitated by modulating binding to opioid receptors in a mammal, comprising an amount of a compound according to claim 1 that is effective in treating such disorder or condition and a pharmaceutically acceptable carrier.

16. A method for treating a disorder or condition selected from inflammatory diseases such as arthritis, psoriasis, asthma, or inflammatory bowel disease, disorders of respiratory function such as asthma, cough and apnea, allergies, gastrointestinal disorders such as gastritis, functional bowel disease, irritable bowel syndrome, functional diarrhoea, functional distension, functional pain, nonulcerogenic dyspepsia and other disorders of motility or secretion, and emesis, stroke, shock, brain edema, head trauma, spinal cord trauma, cerebral ischemia, cerebral deficits subsequent to cardiac bypass surgery and grafting, urogential tract disorders such as urinary incontinence, chemical dependencies and addictions (e.g., addictions to or dependencies on alcohol, opiates, benzodiazepines, nicotine, heroin or cocaine), chronic pain, nonsomatic pain, acute pain and neurogenic pain, systemic lupus erythematosis, Hodgkin's disease, Sjogren's disease, epilepsy and rejection in organ transplants and skin grafts in a mammal, comprising administering to a mammal requiring such treatment an amount of a compound according to claim 1 that is effective in treating such disorder or condition.

17. A method for treating a disorder or condition, the treatment of which can be effected or facilitated by modulating binding to opioid receptors in a mammal, comprising administering to a mammal requiring such treatment an amount of a compound according to claim 1 that is effective in treating such disorder or condition.

18. A pharmaceutical composition for treating a disorder or condition selected from inflammatory diseases such as arthritis, psoriasis, asthma, or inflammatory bowel disease, disorders of respiratory function such as asthma, cough and apnea, allergies, gastrointestinal disorders such as gastritis, functional bowel disease, irritable bowel syndrome, functional diarrhoea, functional distension, functional pain, nonulcerogenic dyspepsia and other disorders of motility or secretion, and emesis, stroke, shock, brain edema, head trauma, spinal cord trauma, cerebral ischemia, cerebral deficits subsequent to cardiac bypass surgery and grafting, urogential tract disorders such as urinary incontinence, chemical dependencies and addictions (e.g., addictions to or dependencies on alcohol, opiates, benzodiazepines, nicotine, heroin or cocaine), chronic pain, nonsomatic pain, acute pain and neurogenic pain, systemic lupus erythematosis, Hodgkin's disease, Sjogren's disease, epilepsy and rejection in organ transplants and skin grafts in a mammal, comprising an opioid receptor binding modulating effective amount of a compound according to claim 1 and a pharmaceutically acceptable carrier.

19. A pharmaceutical composition for treating a disorder or condition, the treatment or prevention of which can be effected or facilitated by modulating binding to opioid receptors in a mammal, comprising an opioid receptor binding modulating effective amount of a compound according to claim 1 and a pharmaceutically acceptable carrier.

20. A method for treating a disorder or condition selected from inflammatory diseases such as arthritis, psoriasis, asthma, or inflammatory bowel disease, disorders of respiratory function such as asthma, cough and apnea, allergies, gastrointestinal disorders such as gastritis, functional bowel disease, irritable bowel syndrome, functional diarrhoea, functional distension, functional pain, nonulcerogenic dyspepsia and other disorders of motility or secretion, and emesis, stroke, shock, brain edema, head trauma, spinal cord trauma, cerebral ischemia, cerebral deficits subsequent to cardiac bypass surgery and grafting, urogential tract disorders such as urinary incontinence, chemical dependencies and addictions (e.g., addictions to or dependencies on alcohol, opiates, benzodiazepines, nicotine, heroin or cocaine), chronic pain, nonsomatic pain, acute pain and neurogenic pain, systemic lupus erythematosis, Hodgkin's disease, Sjogren's disease, epilepsy and rejection in organ transplants and skin grafts in a mammal, comprising administering to a mammal requiring such treatment an opioid receptor binding modulating effective amount of a compound according to claim 1.

21. A method for treating a disorder or condition, the treatment or prevention of which can be effected or facilitated by modulating binding to opioid receptors in a mammal,

comprising administering to a mammal requiring such treatment an opioid receptor binding modulating effective amount of a compound according to claim 1.